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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,770	04/14/2004	Minco Koyama	100725-00123	4709

4372 7590 10/15/2007  
ARENT FOX LLP  
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SUITE 400  
WASHINGTON, DC 20036

EXAMINER
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KRAUSE, JUSTIN MITCHELL

ART UNIT	PAPER NUMBER
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3682

NOTIFICATION DATE	DELIVERY MODE
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10/15/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DCIPDocket@arentfox.com  
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Patent\_Mail@arentfox.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/823,770	<b>Applicant(s)</b> KOYAMA ET AL.	
	<b>Examiner</b> Justin Krause	<b>Art Unit</b> 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding the phrase, "each column is provided with a pair of tongues extending radially away from a base that is parallel to a corresponding annulus", the phrase is indefinite because it is unclear what "a corresponding annulus" refers to; whether a corresponding annulus is one of the previously claimed "pair of annuluses" or something different. Further, assuming that the "corresponding annulus" is one of the annuluses that comprise the "pair of annuluses", the parallelism is undefined, as it cannot be determined which direction the base is parallel to the annulus.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1-15 rejected under 35 U.S.C. 103(a) as being unpatentable over Matsui (US 2003/0068110) in view of Frauenthal et al (US Patent 2,219,031).

Matsui discloses a bearing having a resin cage with a plurality of cylindrical rollers, the dimensions of the radii of the corners of the cage pockets (r), the minimum dimension of the inner diameter side of the annulus (d), and the thickness of the column (t) are defined by a function (paragraph 0061), and the stress concentration is variable dependent on the size of the roller and the variables r, d, and t. Combinations of variables which satisfy the relationships of Matsui, also satisfy the claimed relationships between r, k1, k2, r1, w5, Z and  $\Phi d1$ .

Matsui does not disclose a pair of tongues extending radially away from a base.

Frauenthal teaches a pair of tongues (14) extending radially away from a base (18) for the purpose of retaining the antifriction members against outward radial displacement. (Page 2, col 1, lines 65-73).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Matsui to include tongues for the desired purpose of retaining the rollers in the cage against outward radial displacement as taught by Frauenthal.

Regarding claims 10 and 13, both Matsui and Frauenthal disclose raised contact surfaces on the end surface.

Regarding claims 11 and 14, Frauenthal discloses the guide surface as claimed (fig 1).

Regarding claims 12 and 15, the inner lateral surfaces of each tongue are connected by a bottom surface on an outer surface of the base (fig 1).

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murai (US Patent 6,955,476) in view of Frauenthal.

Murai discloses a bearing having a resin cage with a plurality of cylindrical rollers and states that the radius of curvature of the corners of the pockets can be modified and formed into any suitable configuration which can relax the stress generated from the contact of the rolling element and improve lubricating conditions (col 4, lines 27-33). Murai additionally discloses that the minimum width of the side plate at the recess should be set as large as possible to increase its strength (Col 4, lines 61-63).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Murai and optimize the relationships between  $r$ ,  $Lw$ ,  $k1$ ,  $k2$ ,  $r1$ ,  $w5$ ,  $Z$  and  $\Phi d1$  through routine experimentation, to achieve the desired stress concentration levels for the intended use and functionality of the resin retainer.

Murai does not disclose a pair of tongues extending radially away from a base.

Frauenthal teaches a pair of tongues (14) extending radially away from a base (18) for the purpose of retaining the antifriction members against outward radial displacement. (Page 2, col 1, lines 65-73).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Murai to include tongues for the desired purpose of

retaining the rollers in the cage against outward radial displacement as taught by Frauenthal.

Regarding claims 10 and 13, both Murai and Frauenthal disclose raised contact surfaces on the end surface.

Regarding claims 11 and 14, Frauenthal discloses the guide surface as claimed (fig 1).

Regarding claims 12 and 15, the inner lateral surfaces of each tongue are connected by a bottom surface on an outer surface of the base (fig 1).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Krause whose telephone number is 571-272-3012. The examiner can normally be reached on Monday - Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMK  
JMK 10/4/07

  
Thomas R. Hannon  
Primary Examiner